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WAITOREKE, THE NEW ZEALAND "OTTER": A LINGUISTIC SOLUTION TO A CRYPTOZOOLOGICAL PROBLEM

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ABSTRACT: A variety of Maori words have come to be associated with the putative New Zealand "otter," often termed *waitoreke, kaureke,* or *kaurehe.* The present study examines all the terms that have been associated with this supposed animal, particularly those in Becker (1985) and Watson (1960). Where possible, two types of data are examined for each term. First, an etymology is given based upon the phonological (sound) form together with the morphological (semantic sense) structure, these being determined as accurately as possible given the strictures of Maori grammar. Second, historical citations are documented in order to assess the status of the word: whether or not it is attested; if attested, whether or not it is old or relatively new. Two words survive this analysis as being Maori forms that have a high probability of having been used to denote a native mammal of amphibious habits: *waitoreke* and *kaureke.*

Both names prove to be of rare attestation, but in these cases such poor attestation reflects the antiquity of the word. These names both involve "quill, spur, knob" in their meanings, *kaureke* possibly meaning "very spiney." This unexpected semantic parallel between these names suggests that these survive from a period when direct knowledge of this animal was widespread among the Maori. The well attested name, *kaurehe,* however, reveals very little about the animal to which it refers. This suggests that *kaurehe* is a newer word based upon a diminished acquaintance with the animal itself. Further, the meaning of *kaurehe* is such that it might also be applied to the tuatara. *Kaurehe,* therefore, is rejected as a later distortion of *kaureke.*

There is an excellent possibility that a rare mammal with a foot spur, of restricted habitat and distribution, survived in New Zealand until recent times—if, indeed, not up to the present time. A spur would be diagnostic of a member of the order Monotremata, and an amphibious habit would suggest a monotreme of the genus *Ornithorhynchus,* a New Zealand variant of the Australian platypus. A spiney pelage, however, suggests a member of the genera *Tachyglossus* or *Zaglossus,* though an even more primitive basal monotreme or advanced therapsid (mammal-like reptile) cannot be excluded from consideration.

INTRODUCTION

New Zealand is a land singularly bereft of native terrestrial mammals, only two bats being indigenous. This paucity has been explained as due to an early separation of New Zealand's land mass from the rest of the continents (Stevens 1980), so that later groups of mammals were not able to reach it by migration. Any indigenous quadrupedal mammal would therefore be highly likely to be extremely archaic. Thus, reports extending back at least to the first half of the 19th century (Watson 1960) of a native quadrupedal mammal of amphibious habits have always been of interest to naturalists,

particularly cryptozoologists. Such reports offer a chance, however slim, of finding another mammal at the monotreme level of organization, or perhaps even an advanced therapsid (mammal-like reptile) (see Romer 1966: 173–86, for an account of the subclass Synapsida, the mammal-like reptiles).

Recently, the putative New Zealand "otter" has received renewed attention (Becker 1985, Heuvelmans 1986: 22, 1987: 122–23, Janis 1987: 117). Heuvelmans endorses the old notion that a relict monotreme lies behind the sketchy accounts of this creature (see Watson 1960, for quotes taken from some of the older accounts), while Janis tends to favor either the water rat, *Hydromys chyrogaster,* or some other rodent, most likely brought in with the Maoris. Becker, on the other hand, has assigned the beast to the realm of Maori mythology on the basis of a linguistic scrutiny of the names that have been associated in one way or another with reports of this creature.

Becker's chief point is that *waitoreke* and associated terms have as much to do with the realm of mythology as with that of "water" (*wai-* in Maori), and that, therefore, the words under examination lend little probative force to any arguments favoring the existence of a quadrupedal mammal indigenous to New Zealand. Becker's linguistic approach is a very useful one, insofar as, in this cryptozoological case, the linguistic data associated with this putative animal are richer than the sketchy accounts of its appearance or habits. In most cases, however, I have found other interpretations for the terms involved, and as a result have reached very different conclusions.

I have reassessed all the forms associated with this putative mammal. Only *waitoreke* and *kaureke* survive as likely forms, both with several possible meanings. *Waitoreke* resembles two mythological names that appear to belong to a giant lizard, but phonological details set it apart from these. *Kaureke* does not exhibit mythological parallels, and is not an error for *karara ke,* as has been suggested by Duff (1956: 289, fn. 1).

Also, I have examined the attestation of each term. In other words, not all forms cited for a language have the same significance. Some words may appear to be Maori, but may prove upon closer scrutiny to be errors, never having appeared in the language. Other words may be part of Maori, but be of greater antiquity than others, and as a result convey information from an earlier cultural stage.

METHODOLOGY

First, I have viewed *waitoreke* and its constellation of kindred names as primarily a linguistic problem. The forms put forth by Becker vary in their linguistic status: some are attested and some are not; some are plausible and others not, some are clearly related to one another, while others are not. Further, some confusion regarding dialect similarities and links is evident in Becker's paper, and these can now be untangled, discarding certain forms in the process as being irrelevant or nonexistent. To some extent, the lin-

guistic status of the terms is a function of whether or not they have plausible etymologies; but only in part. I have therefore treated the question of meaning as logically a separate issue, albeit in the act of linguistic analysis itself the meaning of a form is inextricably intertwined with considerations of linguistic structure, "morphology."

In short, I have set about to determine which forms are actually words in Maori, and what these may mean. I shall close by discussing Maori folklore, revising the history of the attestation of this animal, and presenting my conclusions. I might add that the Maori material is often very frustrating to work with, not least because Maori roots exhibit extreme polysemy (many meanings). Becker can hardly be faulted in his efforts to analyze these terms.

I have treated the Maori terms one by one. To arrive at my conclusions, I have set about analyzing the relevant forms in a two-fold fashion: (1) morphology, and (2) plausible meanings. Citations of the forms that are typical in the literature (Becker 1985, Watson 1960) I have placed in italics. My efforts at morphological analysis I have placed in standard "phonemic" notation (representing psychologically distinctive sounds) between slashes, thus "/. . . /." For glosses (rough English equivalents) to the forms, I have used Williams (1971). Forms that are unattested or hypothetical are often marked by an asterisk, thus "*." A form has been glossed morpheme (minimal unit of meaning) by morpheme with each gloss in brackets and set off within single quotes.

Where ambiguity is involved, I have set distinct alternates within the same brackets and separated them by "or." For example: /wai-rua/ ['one' or 'water']-['bone pin' or 'knob, butt']. Thus, both /wai-/ and /-rua/ have been given two glosses each. In many cases, I have ignored glosses that were obviously irrelevant to any conceivable animal name. For grammar, I have used a book by the same Williams (1940), and one by Biggs (1969).

Finally, I have tried to make the study accessible to the non-linguist while at the same time maintaining scientific standards of linguistic rigor.

Criticisms of Becker

I shall begin by demonstrating that Becker's links between Maori /wai-/ and the realm of spirits and mythology are unfounded.

First, Maori /wai-/ has no connection with any Proto-Austronesian word for "spirit." Proto-Austronesian */qanitu/ ['demon'] (Becker 1985: 32) (which in more familiar transcription would be */ʔanitu/, with /ʔ/ a glottal stop, as occurs at the onset of each syllable in the casual English negative "uh-uh"), yields /(w)aitu/ in Maori, and this can only mean "demon," not "ghost," as Becker has it. It is in no way connected with /wai/ or /wairua/, despite the fact that the Maori /r/, which is flapped, is phonetically identical to the flapped intervocalic /t/ or /d/ of some English dialects, and might therefore suggest some link with the /t/ in /(w)aitu/. /Wairua/ is Maori for "spirit,"

and does not appear to be analyzable into smaller morphemes, despite the resemblance of its first syllable to /wai/ ['water'].

Were one to try, one would obtain /wai-rua/ ['water' or 'one (indefinite pronoun)']-['two' or 'pit, hole' or 'store for provisions' or 'grave' or 'a fish' or 'left weaving peg of a loom frame' or 'a special house post' or 'a net'], of which the best reading is "water-fish." "Water-fish," though redundant, is nevertheless coherent. It is quite unrelated, however, to the sense of "spirit."

Second, *waituhi* ['birthrites'], the word for which Becker makes the strongest case of a mythological or spiritual connection, appears to contain the word for "water," from /wai-tuhi/ ['water']-['invoke'], and may well reflect a ritual in which water and cleansing are essential. However, other words put forth by him as containing a morpheme /wai-/ need not have the /wai/ of "water." For example, *whaka-wai(a)* "to entice, beguile, tempt" (with /hʷ/ a rounded *h* as in English "what") (Becker 1985: 32), is from /hʷaka-wai-a/ ['causative']-['entice']-['passive'], "to cause someone to be beguiled, entice," and has /wai-/ the verb, meaning "to entice, beguile." /Wai/ the verb is based upon the noun, /wai/, ['memory for words'], which itself has a kinetic nuance of "ability to follow the gist of a talk."

This notion of leading someone along carries over into the causative-passive /hʷaka-wai-a/. No word for "water" is involved. In a language where words can be homonyms in multi-fold ways, one must take great care to insure that two or more words are not confused merely because they have the same phonological "shapes."

I emphasize that these distinctive /wai-/'s and /wairua/ are linguistic facts, quite independent of certain mythic tendencies to associate water or rivers with the spirit world and death, as some of the etymologies in Becker (1985: 32) do. Any mythical link of *waitoreke* and related terms need not rest with the /wai-/ portion, but is more likely to rest in the following parts of the words. Becker has failed to establish an irrefutable linguistic link between /wai-/ and words containing it, on the one hand, and the realm of mythology, including /waitoreke/ and its variants, on the other.

As to general linguistic patterns for words beginning in /wai-/, I have shown that only one etymology involving "water" is possible, and that the most plausible gloss for this morpheme is "(the) one (who)," based upon the indefinite pronoun /wai/. In modern Maori, /wai/ is used primarily as a separate word, and the grammatical sources do not indicate that it can appear bound within a larger word. One form, however, /wai-raŋi/ ['(the) one'-'(of) heaven'], (discussed in the text), does exhibit /wai-/ in this function. Thus, all the etymologies involving /wai-/ that I have put forth are presumed to be based upon an archaic pattern no longer productive (capable of creating new forms) in Maori, namely /wai-X/ ['(the) one (who is) (of)]-['X'] and clearly preserved only in one other name, which has a largely mythological provenance.

Such archaism is not unusual in names, animal or otherwise, and is probably why one native speaker, Sir Peter Buck, found *waitoreke* "quite ungrammatical" (Krumbiegel 1950). (As an example of non-productive linguistic features being preserved in names, note the English surname "Eaton" from /ea-/ ['water' or 'river'], a word no longer used, thus /ea-ton/ ['water' or 'river']-['town'].) Further, this archaism does not violate current Maori word order restrictions, and is thus not a fanciful departure from Maori grammar. I shall begin with *waitoreke* itself.

The Forms; Their Etymologies and Status

Waitoreke: This is the usual citation. The form cannot be found in the dictionary by Williams (1971). In fact, its attestation is relatively poor. It appears first in 1848 in an early work by R. Taylor, where it is glossed as "otter (uncertain, perhaps 'seal')" (Watson 1960: 180). Its only other attestation is in a work on the southern Maoris (Beattie 1949). Watson (1960: 181) discusses this later citation, and suggests that Beattie was perhaps following an early newspaper account. The evidence suggests that the term is a genuine Maori one, but an old one that was virtually dead by the mid-19th century.

Further, as this term stands it is ambiguous within Maori sound patterns. Maori makes phonemic ("distinctive") contrasts based upon vowel length, which I shall denote by a macron over the vowel. Thus, /o/ is contrasted with long/ō/, as in /poua/ ['grandfather' or 'rain squall'] vs. /pōua/ [a species of bivalve mollusc (*Longimarcata elongata*)], and similarly for the other vowels. I shall consider both /waitōreke/ and /waitoreke/.

/Wai-tō-reke/ = ['water' or 'one']-['dive' or 'set (of the sun)']-['bone pin' or 'knob, butt'], taking only the likely glosses for the morphemes. The form is a compound noun, "water-dive(r)" (Maori can have compound nouns of the form noun-verb), modified by an adjective, "bone pin" or "knob, butt," intended to denote a quill or spur (adjectives follow their nouns in Maori). Thus, one can extract "water-diver (with a) quill or knob," perhaps with a poisonous spur like that of the male platypus.

As evidence against this interpretation, it must be pointed out that Maori can have recently-constructed nouns that preserve sentential word order within the confines of word morpheme order: verb-noun (see Williams 1940: 42, §61). Thus, the verb /-tō-/ ['dive'] could be expected to precede /wai-/, giving an unattested */tō-wai-reke/. This newer pattern of compounding serves to suggest that /wai-tō-reke/ is an old compound name, and serves to explain why, as I have already mentioned, Sir Peter Buck, himself a native Maori, may have found /wai-tō-reke/ ungrammatical.

This etymology immediately explains why this name might be applied to a monotreme of amphibious habits. This monotreme interpretation receives

further support not only from the next etymology, but also from an entirely separate name, /kau-reke/, to be discussed below.

The morpheme /-tō-/ can have a source from /-te-o-/ ['the (singular)']-['of (partitive)'], "(a part) of the. . . ." Thus /wai-te-o-reke/ is a possible source of /waitōreke/, giving a likely sense "the one of the quill, knob." Such a name might describe an animal with a prominent spine or knob somewhere on its anatomy, quite apart from any amphibious habit. A spiny or knobby creature with a multitude of such protuberances, however, appears to be ruled out as an interpretation of this morphemic analysis, despite the temptation to envision a monotreme with quills like the echidna (but see below under *kaureke*). The possessive phrase /-te-o-reke/ is clearly a singular. The plural would have been /-ŋa-o-reke/, with /ŋ/ (called "angma") a velar nasal, as the *ng* in English *sing*. Thus, this reading of the form also suggests a possible monotreme, but one with only a spur and not a set of quills.

/Wai-toreke/ = ['water' or 'one']-['left behind, forsaken']: Here "the one forsaken" is the only plausible reading, and this makes little sense unless one has in mind something like a forlorn ghost. I know of no mythological material that would support this reading.

/Wai-tō-rehe/ = /wai-te-o-rehe/ ['water' or 'one']-['the']-['of']-['wrinkled' or 'tattooed above the eyes' or 'wizened, puny']: Again, this form is not in the dictionary. Here the best reading is "the wrinkled one, the one with folds in his skin," a term that one might imagine applying to a creature like the tuatara (*Sphenodon punctatus*) with its heavy lateral skin folds. One might still maintain, however, that this reading applied to a monotreme with some prominent wrinkles in its hide, much as with the spiny echidna, which has deep folds of skin around the joints of its stubby limbs.

While *waitoreke* is absent from the Williams (1971) dictionary, it at least is attested in the work by Taylor (1848). *Waitorehe,* however, is introduced by Becker (1985: 33) solely on the basis of phonological similarity to *waitoreke,* and is unattested elsewhere. /K/ and /h/ are distinct phonemes in Maori, and any confusion between them must rest entirely upon misreadings of handwriting or typographical errors. Thus, */waitōrehe/ should be rejected as nonexistent.

The morpheme /-rehe/ ['wrinkled' or 'tattooed above the eyes' or 'wizened, puny'] will appear again in /kau-rehe/ (see below).

/Wai-toreŋi/ = ['water' or 'one']-['disappear' or 'set (as the sun)']: Once again, this form is not in the dictionary. Here, two readings are possible: (1) "the one who disappears," (2) "water-disappear(er)." Reading (2) exhibits the same word order archaism as was noted for /wai-tō-reke/ ['water-diver with a quill or knob']. Reading (1) might as well be construed as referring to a ghost as to an amphibious creature. This form is introduced because Becker (1985: 32) has taken note of a sound correspondence between North-

ern Maori (NM) /ŋ/ and Southern Maori (SM) /k/. This correspondence is due to a shift in SM from an earlier */ŋ/ to an attested /k/ (with "*" denoting here an earlier, reconstructed sound). Thus, /wai-toreŋi/ would be NM, and Becker cites Costello (1974), who cites Pollack, who takes *waitoreke* to be its SM equivalent.

This equivalence is based, however, upon two errors: (1) one expects an unattested SM */waitoreki/ with a final /i/ as the equivalent to NM /wai-toreŋi/, and (2) all SM /k/'s need not represent earlier */ŋ/'s, and so need not correspond to NM /ŋ/'s. SM /k/ can correspond to NM /k/ in precisely those words where original */k/ is involved. For these two reasons, *waitoreke* has nothing to do with a hypothetical */wai-toreŋi/. Strictly speaking, even a hypothetical */waitoreki/ need not have anything to do with */wai-toreŋi/ either, unless strong semantic parallels force an equivalence upon the investigator, so that he can make the same analysis of the term as */wai-toreki/. */Waitoreŋi/, therefore, should be rejected as a nonexistent form.

Waitoteke = /wai-tō-teke/ from /wai-te-o-teke/ ['water' or 'one']-['the']-['of']-['female genitals']: This form appears to be an error committed by Wallace (1880) in quoting Hochstetter (1867). Watson (1960: 181) suggests that this is the form of the name used by the tribe, the Ngatimamoe, among whom knowledge of the creature may have originated, since Beattie (1954) put this form in the mouth of one Tuture te Kene, a survivor of this decimated group.

If this attribution is correct, then we would seem to have here one of the oldest forms of the name. Unfortunately, this form seems to mean literally, "water from the female genitals," i.e., "vaginal secretions" or, less likely, "menstrual flow," suggesting that it is, in fact, an error for /wai-tō-reke/. */Wai-tō-teke/, therefore, seems to be spurious. At best, I would tentatively take it to be another attestation of /wai-tō-reke/.

I introduce the next term, /wairaŋi/ solely because it exhibits /wai-/ in its sense of "(the) one (of)," and thus lends support to my previous etymologies. It was for this reason that I first introduced the term to Becker (1985: 33) in my capacity as one of the referees of his paper. The term has no attestation in connection with a putative New Zealand "otter," but, rather, is restricted to a mythological provenance.

/Wai-raŋi/ = ['water' or 'one']-['sky' or 'heaven' or 'head" or 'chief']: Becker (1985: 33) assumes also the unattested SM */wai-raki/. Here /raŋi/ has nine separate meanings. I have given only the appropriate alternates. The best reading would seem to be "celestial one," though "sky water" (that is to say, "rain") is plausible, but merely irrelevant as an animal name. This term as a whole is glossed in the dictionary with three meanings: (1) "beside oneself, excited, infatuated," (2) "foolish," and (3) "a monster." Meaning (3) is the primary sense. The others arise from the monster's conduct in a myth. This monster is a cosmic being with a gigantic stomach. This is evident

from the Maori passage cited in the dictionary by Williams (1971: 476) (I have restored vowel length):

> *Kātahi ka kotia taua ika; kei roto . . . ŋa tāne me ŋa wāhine, kei roto i te puku o taua wairaŋi e pukei (= pūkai) ana.*
>
> Now then, that pile was divided in two; inside, in the stomach of that monster (= /wairaŋi/), the husbands were lying in one heap and the wives in another.

This gargantuan stomach will tie the /wairaŋi/ in with another monster, /ŋārara/ ['reptile' or 'insect'], which will be discussed next. That /wai-raŋi/ would have a celestial connotation, therefore, is plausible in terms of the word's components. That it means "foolish" or "infatuated" arises from another myth, which shall be discussed shortly.

Ngarara is mentioned twice by Becker (1985: 30, 34). The form is actually /ŋārara/ ['insect' or 'reptile'], and is unanalyzable. The word occurs in the name for the brown gecko, *Hoplodactylus pacificus*), /ŋārara pāpā/, also known as /moko-pāpā/ ['lizard']-['gecko'], as /tere-tere/ ['fast']-['fast'] = "very fast," or simply as /pā/ ['gecko']. Becker (1985: 34) suggests that a newly uncovered giant gecko (Bauer and Russell 1986, 1987) will prove to be the /ŋārara/, but Bauer and Russell themselves believe this specimen (370 mm snout-vent length, 622 mm total length) to be the *kawekaweau* (Bauer and Russell 1986: 147, 1987: 86–87). Bauer and Russell (1987: 88) point out that the term /ŋārara/ was first used in 1875 for what was likely to have been a still larger (450 mm snout-vent length) lizard from the Waimakariri River Valley.

For my own purposes, the term /ŋārara/ is important only because it throws light upon the meaning of /wai-raŋi/, and thereby indirectly upon that of /wai-tō-reke/. The relevant meanings emerge in several myths.

The mythological provenance of this term is attested in the following short myth passage (Williams 1971: 229) (I have restored vowel length):

> *I pēnei te ahua o taua ŋārara nei me te kurī e mau nei i te potete. . . .*
>
> The spectre of that /ŋārara/ treated the dog that it had captured on a leash [actually, "a stick for holding a dog"] thus. . . .

The two myths translated by Margaret Orbell (1968: 38–45) link this term with two other names, and it is these names that are linked to /wai-raŋi/. In both myths, a woman is abducted by a /ŋārara/ when she strays near his lair at the base of a tree. The monster keeps her as his wife until she escapes by a simple ruse, showing the foolishness of the monster in the process. She returns to her people, but they persuade her to return to the monster and invite him to visit his new in-laws. This she does, and the monster is so infatuated with her that he foolishly agrees to visit her family. Upon his arrival, he shows the utmost gullibility, and is eventually slain.

This is the source of the senses of /wai-raŋi/ as "foolish" and "infatuated."

In the first myth, he is said to have a huge belly (Orbell 1968: 39). In the second, he is said to be nearly 60 feet long (Orbell 1968: 42, fn. 1), and to show a tremendous capacity for eating (i.e., he has a huge stomach). Here, too, the huge stomach of the /wai-raŋi/ comes to mind.

The link with /wai-raŋi/ becomes compelling, however, when the two names of the monster are analyzed. In the first myth, he is /te kakau-o-te-raŋi/ ['the'] ['swimmer' or 'wader']-['of']-['the']-['sky' or 'heaven'], with the preposed partitive /o/ ['of'], rather than the suffixed form seen above in /-te-o-/ ['the']-['of']. In the second myth, he is called /te mata-o-te-raŋi/ ['the'] ['a small salt water fish somewhat like a minnow']-['of']-['the']-['sky' or 'heaven']. The allusion to a tiny fish is not merely ironic and insulting (the monster grows angry when he is addressed by this name), but also shows the aquatic character of the monster, as well as the Maori belief that, as scaly creatures, fish and lizards are remotely related (Orbell 1968: 44, fn. 1, Becker 1985: 30).

The modern Maori use of /wai/ is to replace names that the speaker does not wish to bother stipulating (Williams 1971: 474, *Wai*(i), sense 3). Given these names, /wai-raŋi/ can now be seen to be a "short-hand" for both of them, replacing /kakau/ and /mata/.

Thus, the /ŋārara/ and the /wai-raŋi/ are linked mythologically, and can be considered to be one and the same monster. Further, names in which /wai-/ plays the role of an indefinite pronoun, "(the) one (of)," can be considered well established on the basis of these myths and /wai-raŋi/.

Karara ke: This form, while not in the dictionary, is clearly SM /kārara kē/, corresponding to NM /ŋārara kē/ ['ŋārara']-['different' or 'extraordinary' or 'apart'] (Duff 1956: 289, fn. 1). The big belly of the /ŋārara/ might indeed be a reference to the large abdomen of the typical gecko. This term would then mean "different, extraordinary, distinct kind of gecko" and might well denote the tuatara, or, perhaps even more likely, the new-found giant gecko, *Hoplodactylus delcourti.* However, as mentioned above, Bauer and Russell (1986, 1987) take /ŋārara/ (= *karara ke*) as referring to yet another unknown lizard.

/Kārara kē/ enters the literature on the *waitoreke* only because Duff (1956: 289, fn. 1) takes the form *kaureke* (see below) to be a typographical error for *karara ke.* There is nothing wrong with /kau-reke/, and so, like Becker (1985: 34), I too reject Duff's argument on this point. One does not have to explain away *kaureke.*

/Kau-rehe/ = ['very' or 'swim (verb)' or 'ancestor']-['fold in the skin, wrinkle' or 'puny']: I have given only the appropriate senses of /kau/. /Kaurehe/ has three meanings: (1) a monster, (2) the tuatara, *Sphenodon punctatus,* (3) a term of derision. The sense of derision most likely arises from the reading "very puny." The sense referring to the tuatara is most likely that of "wrinkled ancestor" or "ancestor with folds in his skin," the

tuatara having prominent folds in its hide, but "wrinkled swimmer" is also possible, since the tuatara has been reported as having some amphibious tendencies (Newman 1878). This term first appears in Mantell (1851: 105), where it replaces the earlier *kaureke* (Mantell 1850).

If the gloss of *Sphenodon punctatus* (the tuatara) is correct for this term, then there are three other names for this animal: /tua-tara/ ['back']-['spine'], /tua-tete/ ['back']-['curly' or 'spear' or 'scrub, brushwood'], and /tua-keke/ ['back']-['obstinate'(?)]. The first, of course, is the name by which the creature is known to us. The last may be a corruption of /tua-kea/ ['back']-['wedge'] (Aaron Bauer, personal communication). All these names suggest an effort to describe the fleshy protuberances that run down the animal's back. Only the last is a bit odd, but might refer to the slight resilience of this rill of cutaneous protuberances. These names are important because they are straightforward descriptive names and should serve as standards, along with /kaurehe/ itself, by which all the preceding names should be judged.

It is quite possible that /kau-rehe/ denotes the tuatara in the wider folk taxonomy of the Maoris, and that it has nothing to do with a putative native mammal. Nevertheless, the term that it replaced, *kaureke,* also makes sense and suggests that /kaur-rehe/ is an effort to accommodate an older term of restricted provenance to a wider realm of Maori culture. Supporting this contention is the fact that /kau-rehe/ tends to mean "monster" (Watson 1960: 180–81, Beattie 1930) more often than it does "tuatara." Therefore, I would assign /kau-rehe/, even though it has come to be frequently used in accounts of the "otter," to the realm of Maori folklore, and see its association with the tuatara as a late gesture toward European standards of realism in biology.

/Kau-reke/ ['very' or 'swim (verb)' or 'ancestor']-['bone pin' or 'knob, butt']: This could mean "very knobby" or "covered in quills," or, less likely, "quill, knob ancestor" or "quill, knob swimmer." This term is not in the dictionary, and cannot, by Maori sound laws, be related to /kaurehe/. Watson (1960: 180) gives the impression that this term is first attested in 1850 in a work by Mantell (1850). This would make its attestation only two years later than that of /wai-tō-reke/ (1848). In fact, this term is the oldest one we have, being attested in 1838 in a letter to Mantell from his son, Walter (Duff 1956: 288–89). This short report is worth citing:

> G. A. Mantell (1850) records that near Temuka in 1838 his son was told about the "only indigenous terrestrial quadruped, except a species of rat, which there are reasonable grounds for concluding New Zealand ever possessed." The Maoris informed him that about ten miles inland there was a "quadruped which they called Kaureke, and that it was formerly abundant, and often kept by their ancestors in a domestic state as a pet animal." It was described as about two feet long "and covered with coarse gristly hair."

Duff (1956: 289, Watson 1960: 190, fn.) claims that Walter Mantell mistook a Maori term meaning "gristly hair" for "grizzly hair," and concludes

that the Maori were trying to describe to the younger Mantell the cutaneous dorsal protuberances of the tuatara. Duff's suggestion regarding confusions over hair may have merit. The Maori may have been trying to describe the fleshy protuberances on the tuatara's back by using a term for "hair" modified by one for "gristle." Most Polynesian languages have one term referring to any growth that protrudes—even slightly but in some profusion—above a well-defined surface. This term would include, therefore, hair, feather, scales, chitinous parts, as well as shrubs, brushwood, undergrowth, leaves, fern fronds, and grass.

The Maori noun /huru/ can refer to "hair" or "feather" or "brushwood, undergrowth" or "white dogskin mat," and the reduplicated intensive /huru-huru/ ['hair']-['hair'] can mean "coarse hair, bristles," or, again, "feather" (Williams 1971: 72). The intensive can also occur in the names of species of fern, such as /huru-huru hʷenua/ ['hair']-['hair'] ['land' or 'ground' or 'placenta'], *Asplenium lucidum,* or in that of a type of flax, *Phormium tenax,* /huru-huru-hika/ ['hair']-['hair']-['plant'].

I reject Duff's argument, however, because the account clearly states that the animal was covered by this "gristly hair," and that it was also coarse. Given semantic divergences between Maori and English, one could still reasonably expect a coat of hair of whatever sort to be clearly distinguished from a dorsal rill of protuberances characteristic of the tuatara. In fact, this feature of the animal is most interesting, for it suggests that it has habits like the platypus, but a pelage more like that of the echidna. The usual hypothesis regarding the origin of mammalian hair asserts that it evolved from fiber-like sensory organs, the proto-trichia, associated with reptile scales (Smith 1960: 114–17). This sensory function is still preserved in the vibrissae, the whiskers so common on mammalian snouts. The ancestral monotreme might have lacked such vibrissae on its rostrum (Murray 1984: 576–77, Fig. 10), but perhaps it exhibited them elsewhere on its body.

It is possible that a very primitive monotreme, therefore, might be expected to have exactly the sort of coarse gristly hair, in effect a sort of proto-hair, attributed to the /kaureke/. Further, the spines of the echidna might, in the light of my suggestion, be seen as secondary modifications of these vibrissae, rather than as modifications of true hair. The split within the monotremes between a soft fur, as in the platypus, and spines or a mixture of spines and hair, as in the echidnas, may be seen as an early differentiation of such coarse proto-hair as reported for the /kaureke/.

In fact, the two terms, /kau-reke/ and /wai-tō-reke/, support one another in that both refer to a quill, spur, or knob, Maori /reke/. I would suggest that both terms are old, are of restricted provenance, and encode the vital fact regarding this animal that it had both a spur, a feature certainly likely if the beast was (or is) a monotreme, as well as a spiny pelage, a feature I would suggest diagnostic of a very primitive level of mammalian organization. The presence of the spur, if it were poisonous as is the case in monotremes, might account for why one Maori said: "We are afraid of them" (Watson 1960: 177).

Mythology

Both /wai-tō-reke/ and /kau-reke/ lack any significant mythological correlates. Maori folklore is rich in monsters of enormous size and appetite: /wai-raŋi/ (SM /wai-raki/), /ŋārara kē/ (SM /kārara kē/), with the epithets /kakau-o-te-raŋi/ and /mata-o-te-raŋi/, /kau-rehe/, /tuatara/, and the /kawe-kawe-au/. The last means ['tendrils' or 'strands' or 'fringe' or 'tentacles']-[(repeated)]-['string' or 'cord' or 'mat pin' or 'small oblong bead made of whale's tooth'] (Williams 1971: 111). The latter dictionary citation contains a short mythological text associating /kawe-kawe-au/ with the tuatara:

> *A ka mau a Kahuŋunu i te kaweau i roto i te ipu, he hʷakawehi i ŋā iwi tūkino mai: he nui te wehi o te iwi Maori i tena mea i te tuatara.*
>
> When the home of Kahungunu was established, in the time of the kaweau in the lake in the cloud, a safeguard for troubled peoples [was] the many spines of the Maori people, of that one, of the tuatara.

Most of these mythic figures have correlates in the folk taxonomy. The /ŋārara kē/ may be a large, as yet unknown, lizard (Bauer and Russell 1987: 87–88). The terms /wai-raŋi/, /kaka-o-te-raŋi/, and /mata-o-te-raŋi/ may refer to the same lizard. /Kau-rehe/ may refer to the tuatara, and /kawe-kawe-au/ may refer to the recently recognized giant gecko, *Haplodactylus delcourti* (Bauer and Russell 1986, 1987). Both /wai-tō-reke/ and /kau-reke/ are conspicuous both for their absence from mythology and for their very modest size, a feature incompatible with the usual lineaments of mythic beasts in Maori lore.

The Maori criterion for inclusion of an animal into the realm of mythology appears to be the inverse of that of the European. Whereas the European typically has assigned to myth creatures that are rare, poorly known, or utterly fanciful, the Maori appears to have assigned to myth animals that are somewhat familiar, animals whose existence in the physical world requires a corollary existence in the parallel world of myth, and whose incorporation into that world lends to myth a sense of coherence and familiarity.

The utter absence of any mythical correlates for either /wai-tō-reke/ or /kau-reke/ does not directly argue for the reality of the animal referred to, as Watson (1960: 181) erroneously suggests, but, rather, supports the hypothesis that both terms are old and refer to a very rare animal known only to a limited circle of Maori; an animal whose incorporation into mythic lore would not have served to illuminate any particular trait or lend familiarity to a myth, simply because it and its habits were so poorly known.

Earliest Accounts

It is worth mentioning that the earliest accounts, those prior to 1838, do not use any native name to denote this putative mammal. The accounts by Captain Cook's men, the first reported (Cook 1777, Vol. 1: 98), are vague, with one man suggesting that the beast most closely resembled a jackal. As Wall (1926) first suggested (as cited in Watson 1960: 181), this first set of sightings might well have been of the Maori dog. If the animal sighted was a monotreme, then it was highly unlikely to have resembled a jackal or a blend of cat and dog, as reported.

Existing monotremes are extremely archaic (Murray 1984), not merely in details of cranial and cervical structure, but also in the extremely reptilian aspects of their shoulder girdles (Murray 1984: 573–74, Romer 1966: 197–98). Some of the peculiarities of their limbs are due to their specializations for digging, but much of their anatomy is simply extraordinarily archaic. It is highly unlikely, therefore, that any monotreme that ever existed would have given—or would still give—a strong impression of being a blend of cat and dog. The animal reported by Cook's men seems to have had nothing to do with the New Zealand "otter."

Accounts beginning in 1844 (Watson 1960: 176–80) clearly refer to an animal of amphibious habits, with one hint that a more terrestrial species might also have existed (Watson 1960: 177), and with one account (pp. 179–80) of an actual skin having been obtained. The animal appears to have been small, with a thick flat tail, white spots, coarse gristly hair (spine-like hair), and, by one account, to have laid eggs the size of a duck's (Watson 1960: 177, quoting Mantell's letter of 1848). Given the meanings of /wai-tō-reke/ and /kau-reke/ posited in the preceding analysis, an animal of aquatic or amphibious characteristics appears most likely. Therefore, I would maintain that the accounts presented in Cook's writings have nothing to do with the later reports, and that the history of the /wai-tō-reke/ rightly begins with young Mantell in 1838 (Duff 1956: 288–89).

Conclusions

The proper terms referring to the putative New Zealand "otter" are /wai-tō-reke/ and /kau-reke/, all others being spurious or later alterations of the earlier terms. Both terms are old and are of limited provenance, reflecting the restricted nature of Maori knowledge of this animal. The first term means either "spurred one who sinks into the water," or, more likely, "the one of the quill/spur." The second term means "very spiney." The first meaning accords perfectly with the native reports of the amphibious habits of the creature, and with the likely habits of an ornithorhynchid monotreme. The second accords well with a monotreme with echidna-like spines. Further, all possible meanings point to an animal with a quill or spur as a part of its

anatomy, a feature important enough to be incorporated into its name. This fact also accords perfectly with the peculiar spur characteristic of male monotremes.

Finally, the strong linguistic evidence at hand pointing to a New Zealand monotreme accords very well with the fact that New Zealand separated from all other land masses at an early period, so that any quadrupedal mammal indigenous to it would likely be at a monotreme level of organization, if not an actual member of the order Monotremata.

After careful consideration of the linguistic material, I conclude that the South Island of New Zealand harbored until the mid-19th century, and perhaps still harbors, a species of monotreme of amphibious habits as yet unknown to science, and most likely a member of the genus *Ornithorhynchus*. The animal was, or is, spiney, showing an extremely primitive form of mammalian hair, a pelage transitional between vibrissae (enlarged prototrichia associated with scales) and true hair. This pelage suggests that the animal may represent an amphibious form of basal monotreme.

One must still recognize the possibility, however, that the animal might be even more primitive than the monotremes, and that egg-laying may be merely a shared and not a diagnostic feature. If ever found alive—or even found in sub-fossil or fossil form—in New Zealand, the animal could well prove to be an advanced therapsid.

The linguistic evidence is good; the conclusions are straightforward and plausible; the significance of such an animal is self-evident. The stakes are high enough, and the likelihood of the persistence of this animal into historical times good enough, that searches for either recent remains or living specimens are warranted.

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